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10/728,273

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Harish Sripad Kulkarni

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EXAMINER

ABDIN, SHAHEDA A

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/728,273	Applicant(s) KULKARNI ET AL.	
	Examiner SHAHEDA A. ABDIN	Art Unit 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05/13/2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 and 18-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 and 18-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The correspondence field on 05/13/2009 has been entered and considered by Examiner.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-2, and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vaitekunas (US Pub. No: 2003/0004806 A1) in view of Firester (US Patent No: 6611241 B1).

(1) Regarding claim 1:

Vaitekunas discloses a method (in Fig. 2 and 4) comprising:

advertising (advertising system 20), from an intermediate computer (e.g. 30, Fig. 4) coupled to a plurality of small displays (i.e. plurality of content display units 25, see Fig. 2), the availability (accessibility or capability, see abstract) of a large display (content display 25, Fig. 4) , the large display comprising, the plurality of small displays (content display units), but advertised as a contiguous (adjacent) large display (i.e. display at content display 25) [0040-0042];

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receiving video (image information) data over a network from a network computer (i.e. 55, [0037]) , the video data format (configured) for display on a-the large display (25, Fig. 4) ([0040-0042]) ;

receiving (receiving at small units display) configuration information (i.e. video data) respectively from a plurality of clients (i.e. display drivers (29-26) associated with the small display units 25, fig. 2), each of the received configuration information including attribute information (characteristic information) associated with a small display (i.e. individual small unit 5) that is part of the large display (content display 25) [0040-0042];

;

Note that Vaitekunas does not clearly disclose that #(1) reformatting the video data on a intermediate computer, and #(2) distributing reformatted video data from the intermediate computer to at least some of the small displays.

However, Firester discloses that #(1) reformatting (reformatting or modifying image data, column 4, line 26-29) the video data on a intermediate computer (note that server 106 associated with IP1 -IP4 is considered as intermediate computer) (see Fig. 2, column 4, lines 20-42 and column 5, lines 5-19).

#(2) distributing reformatted video data (i.e. reformatted image data) from the intermediate computer (server 106 associated with 1P1-IP4) to at least some of the small displays (i.e image generator e.g. 110). (see Fig. 2, and column 4, lines 20-42).

Therefore it would have been obvious to a person of ordinary skill in the art to incorporate the method of reformatting and distributing image data as taught by Firester in to the video data formatting system of Vaitkunas so that #(1) reformatting the video data on a intermediate computer, and #(2) distributing reformatted video data from the intermediate computer to at least some of the small displays could be possible. In this configuration the system would provide a high resolution image in the modular display device (Firester, column 2, lines 7-10).

(2) Regarding claim 2:

Firester teaches the distributing comprises distributing the reformatted video data to the clients (i.e. display driver for each image generators (e.g. 110, 130)), each of the plurality of clients configured to drive one of the small display being part of the large display (i.e. modular display screen 102) (column 3, lines 19-35, column 4, lines 20-42, and Fig. 2). Therefore it would have been obvious to a person of ordinary skill in the art to incorporate the method of distributing the reformatted data as taught by Firester in to the in to the video data formatting system of Vaitkunas so that distributing the reformatted video data to the clients could be possible and therefore each of the plurality of clients could be configured to drive one of the small display being part of the large display .

(3) Regarding claim (6):

Claim limitations and subject matter of claim 6 is discussed in claim 1. The claim defers from claim 1 in that the limitation “a processor-readable medium comprising processor executable instruction” additionally recited. However, the limitations do not define a patentably distinct invention over that in “**Vatekunas**” since both the invention as a whole and “**Vatekunas**” are directed to teach a flowchart in Fig 5-6 which must need to have a processor to execute the Flowchart for the advertising system (see Fig. 5-7). Therefore, to have the limitation “**a processor-readable medium comprising processor executable instruction**” in “**Vatekunas**” would have been a matter of obvious choice to one of ordinary skill in the art. In this configuration the system would provide a high efficiency data transmission in the advertising system of the modular display.

4. Claims 4-5, 7,9-10, and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vaitekunas in view of Firester and further in view of Li (NP. IEEE computer Graphics and Applications, see IDS).

(1) Regarding claim 4:

Note that both Vaitekunas and Firester do not teach reformatting comprises converting coordinates of drawing commands (i.e. application windows) from large display coordinates (i.e. CRT display or Wall display) into small display coordinates.

However, Li teaches wherein the reformatting (extracting) comprises converting coordinates of drawing commands (i.e. application windows) from large display coordinates (i.e. CRT display or Wall display) into small display coordinates (virtual display i.e. small tiles monitors) (note that user can drag application windows from the regular CRT display into virtual display i.e. substantially display on the display wall, i.e. replaced to the small monitor or tiles, page 34, column 2, 1st paragraph).

Therefore it would have been obvious to a person of ordinary skill in the art to incorporate the method of reformation which is comprising converting coordinates of drawing commands as taught by Li in to the video data formatting system of Firester as modified by Firester so that the reformatting could be comprised to convert coordinates of drawing commands) from large display coordinates into small display coordinates. In this configuration the system would provide an immersive and collaborative application with effective data transmission in the modular display device (Li, page 29, column 2, lines 24-33).

(2) Regarding claim 5:

Li teaches wherein the reformatting (extracting) comprises creating multiple drawing commands (i.e. computational alignment at input cluster) from a single drawing command (i.e. instruction from the consol), wherein the single drawing command (instruction from the consol) would otherwise control a drawing that spans two or more of the small displays (i.e. multiple tiles monitors in the display wall) (note that) (page 30, column 2, paragraph 6, page, 31, column 1, paragraph 4 and 5).

(3) Regarding claim 7:

Vaitekunus discloses determining a large display resolution (i.e. content display unit visually displays the information from the content of an image, [0010]) from the configuration information ([0010]),

Li teaches requesting (sending request from multiple pc) from a network computer (console, see Fig. 1), the video data at the large display resolution (page 29, column 2, lines 1-17, page 31, column 1, and column 2, lines 1-6, and lines 16-27, also see the illustration in Fig. 1) (note that the console working as a host and video data stream is flowing console to intermediate computer (i.e. display cluster) throw the system area network, sending and request performance must be applied between consol and display cluster to transfer video data). Thus, it would have been obvious to combining the reference of Li and Vaitenkunas as modified by Firester to teach the limitation as recited in claim 7.

(4) Regarding claim 9.

Note that in claim 6 discussed about a processor-readable medium (Firester, column 16, lines 19-30) (see the discussion in claim 6)

Li teaches wherein the reconfiguring the video data comprises : altering (correcting) coordinates of a drawing (i.e. prespective matrix) command (i.e. execution information from projector) to correspond to one of the small display (i.e. small monitors in the large display wall) (note that corrected matrix based on video stream which is received each time from the console to display cluster's PC's, which is

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executed by projector and the drawing i.e. new pixel forms , page 30, column 2, paragraph 2-3, page 34, column 2, paragraph 3); and creating multiple new drawing commands (i.e. new pixel information for the multiple tiles) from a single drawing command (i.e. information from the display cluster), each new drawing command corresponding to one of the small displays (i.e. multiple monitors or tiles in the large display wall) (page 34, column 1, paragraph 2, column 2, paragraph 1-4). Thus, it would have been obvious to combining the reference of Li and Vaitenkunas as modified by Firester to teach the limitation as recited in claim 9.

(5) Regarding claim 10:

Note that a processor-readable medium as is discussed in Fig. 6, and Li teach wherein the sending (sending extracted data from the display cluster) comprises determining which small displays (i.e. small monitors) to send reconfigured video data to based on which portion of the large display (i.e. screen of the large display) each of the small displays supports (note that each projector render only its own tile portion of the screen space which is based on the corrected or extracted video data, therefore, sending video data based on the portion of the large display) (page 34, column 2, paragraph 3). Thus, it would have been obvious to combining the reference of Li and Vaitenkunas as modified by Firester to teach the limitation as recited in claim 10.

(6) Regarding claim 18:

Vatikunas discloses that a large display configuration computer (in Fig. 2 and 4) comprising:

a configuration to: advertise the availability (accessibility) of a large display, the large display (i.e. content display unit 25, Fig. 4) comprising a plurality of small display devices (plurality of small content display units 25, see Fig. 2), but advertised as a contiguous (adjacent) large display ([0040-0042]) ;

receive, over a computer network (i.e. 55), video data (image data) formatted for the large display (i.e. content display 25, Fig. 4); receive configuration data (i.e. related image data) from a plurality client computers (i.e. incoming data for each small display portion associated with the small display driver interpreted as plurality of client computer) includes a screen resolution (i.e. content display unit visually displays the information from the content of an image, [0010]) each having an associated display device, the configuration data (related image data) received from each client computer ((i.e. incoming data for each small display portion associated with the small display driver interpreted as plurality of client computer) ([0010])).

Firester teaches reformat the video data (reformatting or modifying image data, column 4, line 26-29) formatted for the large display (i.e. 102) for display across the display devices associated with the plurality of client computers (i.e. incoming data for each small display portion associated with the small display driver interpreted as plurality of client computer), the reformatting of the video data (i.e. dividing the image

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information at different image processor i.e. IP1-IP4) for the large display including dividing the video data into distinct video data portions that may be individually rendered on the display devices (i.e. small display portions 110, 140) associated with the plurality of client computers (column 3, lines 19-35, column 4, lines 20-42, and Fig. 4); and

Li discloses a physical location and a display resolution of the display device associated therewith (see the discussion in Claim 3), and

Thus, it would have been obvious to combining the reference of Li and Vaitenkunas as modified by Firester to teach the limitation as recited in claim 18.

(7) Regarding claim 19:

Firester teaches the dividing of the video data (i.e. bitmap data) includes converting coordinates (i.e. coordinates of multiple pixel in multiple image generators i.e. pixel-by-pixel that comprise sub image) associated with the video data (i.e. bit map data) into multiple coordinates sets (note that multiple pixels is associated with multiple coordinate sets) (see column 4, lines 1-20).

(8) Regarding claim 20:

Firester teaches the configuration module (bit map data) is further configured to send a coordinate set (i.e. the position of the multiple pixel) of the multiple coordinate set each of the plurality of client computers (i.e. IP1-IP4) (see column 4, lines 1-20) .

6. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Vatekunas in view of Firester as apply to claim 1 and further in view of Li ((NP. IEEE computer Graphics and Applications, see IDS) and Ellis (US Patent No; 4562450).

Regarding claims 3:

Note that Vaitenunas discloses that determining a large display resolution (i.e. content display unit visually displays the information from the content of an image, [0010]) based on the received configuration information from the plurality of clients (i.e. incoming data for each small display portion associated with the small display driver interpreted as plurality of client computer) ([0010]); but both Vatekunas and Firester do not teach # (1) sending a request (sending a received request) to the network computer from the intermediate computer to transfer the video data from the network computer to the intermediate computer at a large display resolution,

#(2) received configuration information from each of the plurality of clients includes an identification, a location and a screen resolution for one of the small displays that is part of the large display.

Regarding item # (1)

Li teaches sending a request to the network computer from the intermediate computer (i.e. display cluster with multiple PC) to transfer the video data from the network computer (i.e. consol, see Fig. 1) to the intermediate computer at the large

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display resolution (page 29, column 2, lines 1-17, page 31, column 1, and column 2, lines 1-6, and lines 16-27, also see the illustration in Fig. 1) (note that the console working as a host and video data stream is flowing console to intermediate computer (i.e. display cluster) through the system area network, sending and request performance must be applied between console and display cluster to transfer video data).

Therefore, it would have been obvious to a person of ordinary skill in the art to incorporate the method of requesting to the network computer from the intermediate computer to transfer the video data as taught by Li into the display system of Vaitekunas as modified by Firester so that the network computer from the intermediate computer could be transferred the video data from the network computer (i to the intermediate computer at the large display resolution. In this configuration the system would provide an immersive and collaborative application with effective data transmission in the modular display device (Li, page 29, column 2, lines 24-33).

Regarding item # (2)

Ellis in the same field of endeavor teaches an identification (address) and location (i.e. position active area) for each of the small displays (i.e. four separate display area) (column 4, lines 30-45, column 12, lines 30-48).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of invention to incorporate the method of identification as taught by Ellis in to the display system of Vaitekunas as modified by Firester and Li so that receiving the configuration information at the intermediate computer could be including an identification and a location for each of the small displays. In this configuration the

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system would an enhanced high resolution in the large display device (Ellis, column 4, lines 65-67).

5. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Vaitekunas in view of Firester and Li as applied to claim 7 and further in view of Ellis and Sakai et al (US Patent No; 5680525).

Regarding claim 8:

Firester teaches wherein the received configuration from each of the plurality of clients ((i.e. display driver for each image generators (e.g. 110, 130)), includes a screen resolution for one of the small displays that is part of the large display ((i.e. modular display screen 102) (column 3, lines 19-35, column 4, lines 20-42, and Fig. 2).) and Ellis teaches Identification information, but Vaitekunas , Firester and Li and Ellis do not teach determining a large display resolution comprises summing the screen resolutions of the small displays according to a location of the small displays within the large display.

However, Sakai in the same field of endeavor teaches teach determining a large display resolution comprises summing the screen resolutions of the small displays according to a location of the small displays within the large display (e.g. 2111b) (column 27, lines 65-67, column 28, lines 1--15).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of invention to incorporate the method summing (i.e. calculating) the resolution as taught by Sakai into the display system of Vaitekunas as modified by

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Firester, Li and Ellis so that determining a large display resolution could be summing (calculation) the screen resolutions of the small displays according to a location of the small displays within the large display. In this configuration the system would have high resolution display with better quality.

Response to Arguments

7. Applicant's arguments with respect to claims 1-10, and 18-19 have been considered but are moot in view of the new ground(s) of rejection.

In view of amendment, the reference of Vatekunas (US Patent No: 20030004806) has been added for further consideration.

Inquiry

8. Any inquiry concerning this communication or earlier communication from the examiner should be directed to **Shaheda Abdin** whose telephone number is (571) 270-1673.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Richard HJerpe** could be reached at (571) 272-7691. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about PAIR system, see <http://pari-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Shaheda Abdin

06/12/2009

/Regina Liang/

Primary Examiner, Art Unit 2629

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